

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 37

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte PASCAL PENNETREAU and FRANCINE JANSSENS

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Appeal No. 2000-0782  
Application No. 08/549,322

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HEARD: February 19, 2002

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Before KIMLIN, WALTZ, and POTEATE, Administrative Patent Judges.  
WALTZ, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 11-29 and refusal to allow claims 1-10 as amended subsequent to the final rejection (see the amendment dated Dec. 29, 1997, Paper No. 24, entered as per the Advisory Action dated Jan. 26, 1998, Paper No. 25). Claims 1-29 are the only claims pending in this application.

According to appellants, the invention is directed to a process for the manufacture of 1-chloro-1-fluoroethane, 1,1-difluoroethane, or mixtures thereof, with reduced formation of

heavy halogen-containing side products, by reacting hydrogen fluoride with vinyl chloride in the liquid phase in an organic solvent consisting of at least one saturated halogen-containing hydrocarbon (Brief, page 2).

Appellants state that their claims do not stand or fall together (Brief, page 4). However, appellants do not provide any reasonably specific, substantive reasons for the separate patentability of any individual claim except claim 11 (Brief, page 8; Reply Brief, page 12).<sup>1</sup> Therefore, pursuant to the provisions of 37 CFR § 1.192(c)(7)(1997), we select claim 1 from the grouping of claims and decide this appeal as to the ground of rejection on the basis of this claim alone, with consideration of claim 11 to the extent it is separately argued by appellants (see the Answer, page 2, paragraph (7), and the Brief, page 8). Illustrative claim 1 is reproduced below:

1. A process for the manufacture of 1-chloro-1-fluoroethane, 1,1-difluoroethane or mixtures thereof, with reduced formation of heavy halogen-containing side products, by reaction between hydrogen fluoride and vinyl chloride in the liquid phase, wherein the hydrogen fluoride and the vinyl chloride are introduced into an

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<sup>1</sup>We refer to the Reply Brief dated Aug. 31, 1998, Paper No. 30, entered by the examiner as noted in the Letter dated Sep. 16, 1998, Paper No. 32. The Substitute Reply Brief dated Dec. 28, 1998, Paper No. 33, was refused entry by the examiner and thus is not part of the record before us in this appeal (see the Letter dated Jan. 20, 1999, Paper No. 34).

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organic solvent consisting of at least one saturated halogen-containing hydrocarbon.

The examiner has relied upon the following references as evidence of obviousness:

Wairaevens et al. (Wairaevens)	5,008,474	Apr. 16, 1991
Rao (published International Application)	WO 89/12614	Dec. 28, 1989

Lovelace, *Aliphatic Fluorine Compounds*, pp. 12-14, 1958.

Claims 1-29 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Wairaevens in view of Rao and Lovelace (Answer, page 3).<sup>2</sup> We *affirm* the examiner's rejection but denominate this "affirmance" as a new ground of rejection pursuant to the provisions of 37 CFR § 1.196(b) since we rely upon a claim construction, admitted prior art, and reasoning that differs from the examiner's principal analysis of the claims and the applied prior art. Our reasoning follows.

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<sup>2</sup>The examiner inadvertently omits the actual restatement of the rejection on page 3 of the Answer. However, this rejection is appropriately stated on page 2 of the final Office action dated Aug. 29, 1997, Paper No. 22, and is stated and argued by appellants as the issue on pages 3-4 of the Brief. Accordingly, the examiner's omission is deemed harmless and we review the rejection as stated in the final Office action.

## OPINION

### *A. Claim Construction*

Prior to any analysis of the scope of the prior art and comparison with the claimed subject matter, we construe the scope of the claimed subject matter as broadly as reasonably possible in light of the specification as it would have been interpreted by one of ordinary skill in the art. *See In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997).

The process recited in claim 1 on appeal requires the production of 1-chloro-1-fluoro-ethane, 1,1-difluoroethane or mixtures thereof, by reacting hydrogen fluoride and vinyl chloride in the liquid phase, where the reactants are introduced into an organic solvent consisting of at least one saturated halogen-containing hydrocarbon. The saturated halogen-containing hydrocarbon solvent may be a halogen-containing hydrocarbon which is "external" to the reaction, "that is to say a compound other than those which are formed from vinyl chloride." Specification, page 3, ll. 4-7. However, in an "advantageous embodiment, the solvent may consist, partly or totally, of products formed in the process." Specification, page 6, ll. 21-25. Accordingly, construing the process of claim 1 on appeal as broadly as reasonably possible in light of the specification as it would be

interpreted by one of ordinary skill in the art, the claimed process includes the liquid phase reaction of hydrogen fluoride with vinyl chloride with the product 1-chloro-1-fluoro-ethane, 1,1-difluoroethane, or mixtures thereof, remaining in the reaction zone, acting as a solvent (see the Answer, page 5, last paragraph).

Appellants argue that the claimed word "introduced" is a feature of claim 1 that was not considered or recognized by the examiner in the claim interpretation discussed on page 5 of the Answer (Reply Brief, pages 5-6). However, this argument is not persuasive since the word "introduced [into an organic solvent]" is used in the specification as inclusive of both "external" and internal solvents, i.e., those where the solvent may consist, partly or totally, of products formed in the process. See the specification, page 2, ll. 35-39; page 3, ll. 4-7 and 14-17; and page 6, ll. 12-25. Accordingly, construing the claim as broadly as reasonably possible in light of the specification, the word "introduced" encompasses adding the vinyl chloride and hydrogen fluoride reactants to either an external or internal solvent consisting of at least one saturated halogen-containing hydrocarbon.

*B. The Admitted Prior Art*

Appellants admit that "[i]t is known to prepare 1-chloro-1-fluoroethane by reaction between vinyl chloride and hydrogen fluoride in the liquid phase." Specification, page 1, ll. 8-10.<sup>3</sup> Additionally, joint production of the 1-chloro-1-fluoroethane and 1,1-difluoroethane products was also known from these same reactants (specification, paragraph bridging pages 1-2).

The admitted prior art as acknowledged by appellants does not disclose or teach that the product(s) is (are) immediately removed from the reaction zone. Accordingly, at some point during the reaction, product will be present which acts as a solvent, which reads on the construction of claim 1 as discussed above. See *Exxon Chemical Patents Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1558, 35 USPQ2d 1801, 1804-05 (Fed. Cir. 1995).

*C. The Applied Prior Art*

Rao discloses a process for the preparation of fluorinated alkanes by contacting halogenated alkenes, including vinyl

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<sup>3</sup>It is axiomatic that admitted prior art in an applicant's specification may be used in determining the patentability of a claimed invention (*In re Nomiya*, 509 F.2d 566, 570-71, 184 USPQ 607, 611-12 (CCPA 1975)); and that consideration of the prior art cited by the examiner may include consideration of the admitted prior art found in an applicant's specification (*In re Davis*, 305 F.2d 501, 503, 134 USPQ 256, 258 (CCPA 1962); *cf.*, *In re Hedges*, 783 F.2d 1038, 1039-40, 228 USPQ 685, 686 (Fed. Cir. 1986)).

chloride, with hydrogen fluoride (HF) in the presence of certain catalysts (pages 1-2; page 3, l. 12). The resulting product has one hydrogen atom over and above the original number in the alkene reactant, and one or more fluorine atoms over and above the number originally present in the alkene reactant (Rao, page 2, ll. 22-27). The reaction may be carried out in the liquid phase or vapor phase (page 3, ll. 13-14). Rao does not teach or exemplify any removal of the resulting product before the completion of the reaction (page 4, ll. 7-35; see the Examples on pages 6-8).

Lovelace discloses the addition reaction of hydrogen fluoride to olefins containing a chlorine atom on a carbon atom of the double bond, such as vinyl chloride, to produce 1-chloro-1-fluoroethane, or a difluoroethane product if higher reaction temperatures and excess hydrogen fluoride are used (page 13). Lovelace does not disclose or suggest the removal of the product from the reaction zone.<sup>4</sup>

*D. Comparison of the Prior Art and the Claimed Subject Matter*

In view of our claim construction as discussed above, and the analysis of the scope and content of the admitted prior art and the

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<sup>4</sup>A discussion of Wairaevens is unnecessary to our decision, essentially for the reasons stated in the Brief and Reply Brief.

applied prior art, we determine that all of the limitations of the process of claim 1 on appeal would have been suggested to one of ordinary skill in the art at the time of appellants' invention in view of this prior art evidence. The admitted prior art and the applied references to Rao and Lovelace all suggest that the product is not removed from the reaction zone and thus remains as a solvent for the reactants as they are introduced into the reaction zone.

Appellants argue that claim 11 further differs from the disclosure of the applied prior art in the use of a different organic solvent, namely 1,3-dichloro-1-fluorobutane (Brief, page 8). This argument is not well taken since claim 11 on appeal recites that the organic solvent consists of "at least one saturated halogen-containing hydrocarbon" selected from a group which includes the 1-chloro-1-fluoroethane and 1,1-difluoroethane products of the admitted prior art. Claim 11, contrary to appellants' argument, is inclusive of but not limited to 1,3-dichloro-1-fluorobutane.

*E. Conclusion*

For the foregoing reasons, we determine that the claimed subject matter would have been *prima facie* obvious in view of the admitted prior art, Rao and Lovelace. Since our claim construction, reasoning and analysis of the prior art differs from



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that presented by the examiner, we denominate this "affirmance" of the examiner's rejection as a new ground of rejection under 37 CFR § 1.196(b).

Appellants' remaining arguments (Brief, pages 4-14; Reply Brief, pages 2-4 and 6-12; and Appendix 2, the Janssens Declaration under 37 CFR § 1.132) are deemed moot in view of the new ground of rejection above.

This decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b) provides that, "A new ground of rejection shall not be considered final for purposes of judicial review."

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (§ 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

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No time period for taking any subsequent action in  
connection with this appeal may be extended under 37 CFR  
§ 1.136(a).

**AFFIRMED - 37 CFR § 196(b)**

EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
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	)	
	)	BOARD OF PATENT
THOMAS A. WALTZ	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
LINDA R. POTEATE	)	
Administrative Patent Judge	)	

TAW/jrg

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